

12

REMARKS

The present amendment is prepared in accordance with the requirements of 37 C.F.R. § 1.121. Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the remarks below.

Claim 8 has been amended to clarify that which applicant regards as the invention. It is submitted that the claim amendments would not require a further search of the art since these limitations were previously considered by the Examiner, as is recited in claims 21 and 101.

Claims 16, 75-84 and 93-100 have been canceled.

No new matter has been added.

Election/Restrictions

Applicant has canceled claims 75-84 and has withdrawn claims 90, 91, 98, 99, 106 and 107 from examination on the merits, and as such, submit that the Election/Restriction rejection in the Office Action of April 26, 2006 is now moot.

No new matter has been added.

35 USC§ 112 Rejections

The Examiner has rejected claims 8, 9, 16, 20, 93-97 and 100 under 35 USC§ 112, first paragraph, as failing to comply with the written description requirement. In view of the same, applicant has amended claim 8 to clarify that the sheet comprises carbonized fibrillated lyocell fibers carbonized at a temperature of less than about 600°C and that the microbiological interception enhancing agent is on a portion of

13

selected ones of the carbonized fibrillated lyocell fibers. Claims 93-100 have been canceled, and as such, the rejection thereof is now moot.

No new matter has been added.

Claim Rejections - 35 USC§ 103

The Examiner has rejected claims 8, 9, 16, 21, 85-89, 93-97, 100-105 and 108 under 35 USC§ 103(a) as being unpatentable over Giglia (US 4,929,502) in view of Arons et al. (US4,217,386) and Sawan et al. (US5,681,468). Claims 16 and 93-100 have been canceled, as such, the remaining claims rejected under 35 USC§ 103(a) are claims 8, 9, 21, 85-89, 101-105 and 108. Claims 20 and 92 have not been addressed in the above office action.

In the office action of April 26, 2006, the Examiner states that Giglia US 4,929,502 teaches a sheet material of fibrillated cellulosic materials such as cellulose acetates, rayon, hemp, cotton, etc. with Canadian Standard Freeness less than 200, or 50 or 25 (Abstract, col. 3, l. 45 to col. 4, l. 10; col. 6, ll. 57-66.) The Examiner also states that Giglia teaches having carbon fibers in the sheet, which has diameters less than 250 nm.

The Examiner also states that Arons teaches carbonizing the sheet to obtain activated carbon in the sheet, and use of rayon as the precursor fabric. (Abstract, col. 3, ll. 1-13; col. 4, ll. 10-17.) The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to use the well-known teaching also for the activated carbon sheet, particularly as in claim 9, for such applications as chemical protective clothing, as taught by Giglia.

14

The Examiner recognizes that Giglia does not teach having a microbial interception enhancing agent on selected fibers. However, the Examiner states that Sawan teaches a liquid dispenser with sterile filter wherein the filter has at least a partial coating of a microbial interception enhancing agent, which is a metal coating or a metal -amine complex. (Col. 3, ll. 39-55; col. 10, ll. 9-14.) The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to use the teaching of Swan in the teaching of Giglia to have a filter material with antimicrobial characteristics as taught by Sawan for protective coating and filtering applications as taught by Giglia (see col. 1, ll. 29-55.)

Applicant disagrees with the Examiner's rejection of claims 8, 9, 21, 85-89, 101-105 and 108 under 35 USC§ 103(a).

It is submitted that independent claim 8 is directed to a sheet comprising carbonized fibrillated lyocell fibers and a microbiological interception enhancing agent on a portion of selected ones of the carbonized fibrillated lyocell fibers. The carbonized fibrillated lyocell fibers have a Canadian Standard Freeness of less than about 100 and a fiber diameter of less than or equal to about 400nm. The sheet has been carbonized at a temperature of less than about 600°C. Claim 9 further clarifies that the sheet may also be further heated to form an activated carbon sheet having a BET surface area of greater than about 800 m²/g.

Independent claim 21 is directed to a sheet comprising activated, carbonized fibrillated lyocell fibers and a microbiological interception enhancing agent on a portion of selected ones of the fibrillated lyocell fibers. The fibrillated lyocell fibers having a BET surface area of greater than about 800m²/g, wherein prior to

carbonization and activation, the fibrillated fibers have a Canadian Standard Freeness of less than about 100 or a fiber diameter of less than or equal to about 400nm and wherein activation occurs in less than or equal to about 30 minutes at a temperature greater than about 875°C in an oxidizing atmosphere.

Independent claim 85 is directed to a sheet comprising activated, carbonized fibrillated fibers having a microbiological interception enhancing agent on a portion of selected ones of the fibrillated fibers. The microbiological interception enhancing agent comprises a biologically active metal precipitated with a counter ion of a cationic material that is adsorbed on the portion of the selected ones of the activated, carbonized fibrillated fibers. Independent claim 101 clarifies that the activated, carbonized fibrillated fibers are activated, carbonized fibrillated lyocell fibers having the microbiological interception enhancing agent on a portion thereof.

That is, all of the pending claims include applicant's unique microbiological interception enhancing agent on a portion of selected ones of the carbonized fibrillated fibers. This microbiological interception enhancing agent comprises a biologically active metal precipitated with a counter ion of a cationic material that is adsorbed on the portion of the selected ones of the carbonized fibrillated fibers. Applicant points out that the counter ion of the cationic material is adsorbed on the portion of the selected carbonized fibrillated fibers.

Applicant submits that the cited Giglia patent is limited to fibrillated fiber precursors that are defined by their Canadian Standard Freeness in combination with their Tensile Strength when formed into a sheet. (Abstract.) The fibers can be used to make fabrics that comprise the fibrillated fiber alone or in combination with a toxic absorbing agent or filtration material, which may include activated carbon fibers or

powders. For instance, these filtration and toxic absorbing agents of activated carbon fibers or powders may be combined with the fibrillated fibers of Giglia, e.g., fibrillated acrylic fibers, and activated carbon particles and wet-laid in a conventional paper-making procedure.

As recognized by the Examiner, Giglia does not teach or suggest a microbial interception enhancing agent on selected fibers. To overcome this deficiency the Examiner cites Sawan. However, it is submitted that Sawan only discloses a liquid dispenser having a filter, which has at least one surface and a plurality of its pores coated with a metallic material that is bacteriostatic or bacteriocidal of a metal or metal oxide or metal salt. (Abstract, Summary of the Invention section.) It does not teach a microbiological interception enhancing agent on a portion of selected carbonized fibrillated lyocell fibers, as claimed in claims 8 and 21, nor does it even contemplate or suggest that a microbiological interception enhancing agent can reside on portions of carbonized fibrillated fibers. It is only applicant's disclosure that teaches a microbiological interception enhancing agent on a portion of selected carbonized fibrillated fibers, which of course, is improper as a hindsight reconstruction of applicant's invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983) (Hindsight based on reading of the patent in issue may not be used to aid in determining obviousness). The cited references, and not in retrospect, must suggest doing what Applicant has done. In *re Skoll* (CCPA 1975) 187 USPQ 481. Likewise, hindsight and the level of ordinary skill in the art may not be used to supply a component missing from the prior art references. *Al-Site Corp. v. VSI International, Inc.*, 174 F.3d 1308, 1324, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999).

Further, with respect to claims 85 and 101, Sawan does not disclose or suggest a microbiological interception enhancing agent that comprises a biologically active metal precipitated with a counter ion of a cationic material, whereby the counter ion of the cationic material is adsorbed on the portion of the selected ones of the carbonized fibrillated fibers, as is currently claimed. Again, it only teaches a bacteriostatic or bacteriocidal of a metal or metal oxide or metal salt coated on the filter, and as such, does not remedy the deficiencies of Giglia.

As for claim 9, which depends from claim 8, the Examiner has further cited the Arons patent. However, applicant submits that Arons would not remedy the deficiencies of Giglia and Sawan, alone or in any proper combination, since Arons only discloses carbonizing a sheet to obtain activated carbon in the sheet. (Abstract, col. 3, ll. 1-13; col. 4, ll. 10-17.) It does not disclose or contemplate a sheet as claimed in the instant claims.

Further, in the office action, the Examiner has taken the position that the terms "fibrillated" and "carbonizing", "heating or activation at 600 or 875C", etc. are part of the process of making, and are not patentable, therein citing *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Applicant disagrees.

It is submitted that it is the structure implied by the process steps that should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as

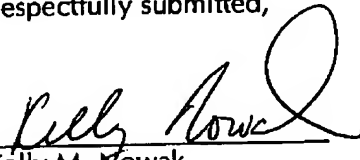
18

"welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations. Applicant submits that the terms "activated," "carbonized," and "fibrillated" all impart distinct structural characteristics to applicant's resultant claimed sheet comprising activated, carbonized fibrillated fibers and a microbiological interception enhancing agent on a portion of selected fibers. Applicant respectfully submits that it would not have been obvious in view of the cited references to provide selected carbonized fibrillated fibers with a microbiological interception enhancing agent (i.e., the terms fibrillated and carbonized describe distinct structural characteristics of the final sheet in that the microbiological interception enhancing agent is provided to such fibers only after they have been fibrillated and carbonized).

In view of the foregoing, and under the applicable patent law in this area, it is respectfully submitted that the claims are properly allowable under 35 USC 103.

It is respectfully submitted that the application has now been brought into a condition where allowance of the case is proper. Reconsideration and issuance of a Notice of Allowance are respectfully solicited. Should the Examiner not find the claims to be allowable, Applicants' attorney respectfully requests that the Examiner call the undersigned to clarify any issue and/or to place the case in condition for allowance.

Respectfully submitted,


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